

## **Appendix D    Soils / Hydrology**

### Existing Environment – Soils

The dominant soil types on the north side of Lost Creek Reservoir are derived from basalt and andesite volcanic rocks. The most abundant soils found in this portion of the project area are the McNull, Medco, and McMullin soil series. These are soils predominantly found in association with one another throughout the landscape.

The McNull soils are moderately deep (20-40 inches) weathered andesitic and tuffaceous bedrock. They typically have a clayey subsoil (greater than 35% clay content) with a loam or gravelly loam surface layer. Due to clay content, these soils are subject to compaction and slope instability. Older slumps and benches can be found in forested areas particularly where the Medco soils are found in association with them.

The Medco soils are moderately deep to highly weathered tuffaceous bedrock. They typically have a high clay content (greater than 50%) in the subsoil with a gravelly or cobbly clay loam surface layer. These soils are considered fragile due to severe hazard for compaction, slope instability, and potentially high water tables resulting from the dense clay subsoil. Road failures (cutbank and fillslope slumping) and slope failures (e.g. benchy and hummocky topography with jack-strawed trees) are common landscape features where these soil types are dominant.

The McMullin soils are shallow (less than 20 inches) to hard, fractured, andesitic bedrock. They typically have a gravelly or cobbly clay loam subsoil with a gravelly or cobbly loam surface layer. These soil types are found in association with the McNull, Medco, and rock outcroppings throughout this portion of the landscape. Due to their shallowness and high rock content, they typically only support shrub, grasses, and forbs vegetative communities. They are usually found in meadows and around the periphery of rock outcroppings. Since they have thin organic and mineral surface layers, they have rapid hydrologic response to runoff which leads them to be prone to gully and rill erosion from mechanical disturbance.

In section 31 and 35 south of the Lost Creek Reservoir the dominant soil types are the Freezner and Geppert soil series.

The Freezner soils are very deep 60+ inches to weathered andesitic bedrock. They typically have a gravelly loam surface and a clay loam sub-soil. These soils support a highly productive stand of conifer trees with compaction the most limiting factor from management activities. They are mostly found on flat benches and gently sloping hillsides. They are also found on steeper sideslopes in complex with the Geppert soils.

The Geppert soils are moderately deep (20-40 inches) to fractured andesitic bedrock with greater than 35% rock fragments in the sub-soil. They typically have a cobbly loam surface layers and a extremely cobbly clay loam sub-soil. This extremely cobbly sub-soil restricts rooting depth and limits the waterholding capacity of this soil type. Windthrow can be a hazard on these soils. Conifer trees are typically the dominant vegetative component. They are mostly found on side-slopes and narrow ridge tops.

For a detail soil unit map and list of soil types see EA file attachments. The Jackson County Soil Survey conducted by the Soil Conservation Service 1987 and spot field reconnaissance were used to identify soil types and inclusions within this project area. This level of survey is considered adequate for meeting stated soil objectives. It should also be noted that all project design features (PDFs) are designed to mitigate soil impacts on the most restrictive soil type in a given unit.

See EA file for soil maps of individual project units.

## **Watershed**

See the Lost Creek Watershed Analysis for over view and description of the streams and hydrologic condition in this project area. In the Flounce Rock and Burnt Peak portion of the watershed (approx. 21,400 acres: approx. 10,760 acres BLM managed). The dominant issue for streams and water quality in the area is embeddness resulting from sediment delivery from roads, particularly un-surfaced or inadequately surfaced and un-maintained roads. Other risks from roads related to how adequate the structures at streaming crossings are functioning. See Road Related Sediment issue discussion.

Flooding from rain on snow events resulting from accumulated snow packs in openings of the over-story canopy within the (TSZ) transient snow zone (3500-4500' band) are considered to be at a low level of risk. This is because there is a small amount of acres 1,425 or 6.5% of total acres in the TSZ in this portion of the watershed. BLM manages approximately half on this total which would have a negligible effect an potential TSZ issues.

There are no State (303D) water quality limited listed streams in this portion of the watershed.

All soil and water issues not analyzed in detail in this EA are expected to meet the guidelines and objectives of the Lost Creek Watershed Analysis, the MDFO RMP, and the Aquatic Conservation Strategies set forth in the Northwest Forest Plan. They're expected to be met by the type and method of treatments proposed, through implementation of project design features (PDFs), and proposed future restoration projects in this area.